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REPORT OF THE MINNEAPOLIS MEETING OF THE AMERICAN FEDERATION OF TEACHERS OF THE MATHEMATICAL AND THE NATURAL SCIENCES.

The annual meeting of the Council of the American Federation was held at the University of Minnesota, Minneapolis, Minn., on Wednesday morning, December 28, at 10 A.M.

The roll call of the meeting showed seven delegates present, six from the Central Association of Science and Mathematics Teachers and one from the Association of Mathematical Teachers in New England. Since there was not a quorum present, it was announced that all business transacted would have to be ratified by written vote of the Council.

In the absence of the secretary, Professor F. L. Charles, of the University of Illinois, was elected secretary pro tem.

The minutes of the last meeting (Boston, 1909) having been printed, it was voted that their reading be dispensed with and that they be approved as printed in *School Science and Mathematics* for April, 1910 (Vol. X., p. 343).

The report of the secretary-treasurer was presented in print in Bulletin III., and it was voted that the report be approved as printed.

Reports were presented from the Executive Committee, the Committee on College Entrance Requirements in Mathematics and Science, the Committee on Logarithmic Tables, the Committee on Bibliography, the Committee on a Syllabus in Geometry, the Committee on a Mathematical Journal, and the Committee on the Unit in Chemistry. It was voted that these reports be received, printed, and distributed to all members of the federated associations, in order that the council and the associations might have opportunity to consider them before taking action on them. These reports are appended.

Reports were presented from six of the local associations. It was voted that these reports be printed and distributed. Reports are appended.

The nominating committee reported nominations for the officers of the federation for the coming year as follows: President, C. R. Mann, the University of Chicago; secretary-treasurer, E. R. Smith, Polytechnic Preparatory School, Brooklyn, N. Y.; members of the Executive Committee—Ira M. DeLong, University of Colorado; I. N. Mitchell, State Normal School, Milwaukee; Wilhelm Segerblom, Phillips Exeter Academy, Exeter.

It was unanimously voted that the secretary cast the ballot for the nominees. The secretary cast the ballot, and those nominated were declared elected officers for the coming year.

On Thursday morning, December 29, the federation held a joint session, with Section L, A. A. A. S. This meeting was well attended. The topic, "Testing Results of Teaching Science," was presented by Professor E. L. Thorndike; and Professor O. W. Caldwell described some experiments in testing that were in progress at the University High School in Chicago. Professor Thorndike's paper is herewith printed in full, and Professor Caldwell's will be printed as soon as the experiment is completed and the results ready for publication.

F. L. Charles,
Secretary pro tem.

Since the meeting at Minneapolis, the actions there taken have been submitted to the council by letter and ratified by written vote of the majority of the members.

E. R. Smith,
Secretary.

Report of the Executive Committee.

In presenting its report this year, your executive committee wishes first to review briefly the activities of the federation. The first preliminary meeting of delegates for the purpose of organizing this body was held in December, 1906. No organization was completed that year, but a committee was appointed to frame articles of federation and report in 1907. The articles of federation were presented to the delegates from the local associations at a meeting in Chicago in January, 1908. Before the organization could be completed, however, these articles had to be approved by each of the local associations. The year

1908 was spent in making the purpose of the federation clear to the local associations and in securing the approval of seven of them to the articles of federation. These seven associations paid dues that year to the amount of about $70, of which $50 was spent in paying for the printing and postage used in the work of organization up to November, 1908.

In November, 1908, the executive committee issued an eight-page bulletin, which was sent not only to all the members of all the associations that had joined the federation, but also to the members of those associations that were considering joining. This bulletin contained a brief statement of the proposed purpose and policy of the federation, a brief history of its organization, the announcement of the appointment of a committee to prepare a bibliography of science teaching, and the call for the annual meeting in Baltimore in December, 1908. The cost of printing and distributing this bulletin was about $65.

Thus the work of making known what the federation was for, and of interesting associations in it, occupied two full years, and cost $115. The work of advancing science teaching, for which the federation was formed, could not begin until this preliminary work was completed.

During the year 1909 six more associations joined the federation. A second bulletin, of twenty-four pages, containing the report of the meeting in Baltimore, the papers read there, together with the announcement of the appointment of committees on publication, on a syllabus in geometry, and on the relations between the high school and the college was issued that year. In the appointment of these committees the real work of the federation began.

This second bulletin was again distributed to all members of all associations which had joined the organization, and was given wide publicity in the educational press. The total cost of printing and postage was about $75. Your committee considered it necessary to print and distribute these bulletins in this way, because there is as yet no established means of publication which reaches all the members of all the associations. The establishment of such a means of communication is still one of the problems before the federation. Two committees are at work on it—the one on publications and the one on a mathematics journal.

A third bulletin of four pages has just been issued, containing the call to the meeting at Minneapolis, the announcement of the appointment of the committees authorized at the Boston meeting, the financial statement, and the list of associations which are now members of the federation.

During the past two years, 1908–09, dues were paid by the associations at the rate of five cents per member. In return for this each member received Bulletins 1 and 2, beside assisting in paying the expenses necessary to the organization of so cosmopolitan a body. Last year the associations voted to raise the dues to ten cents per member, as it was clear that the work of the committees that had been appointed could not be supported and their reports printed without the additional income which resulted from the increase in dues. Some of this money has been used in paying for printing and postage for the committees, but the greater part has been reserved for use in securing copies of the report of the committee on bibliography. This report has been completed and accepted by the U. S. Bureau of Education for issue as one of its special bulletins on education. Arrangements have been made to secure enough reprints of this report to send a copy to every member of each of the local associations in the federation. Requests for copies of this report have been received from England, Germany, India, the Philippines and Honolulu.

The committee on the relations between colleges and high schools is presenting an important report at this meeting. This report is the result of eighteen months of hard work on the part of this committee. It contains valuable suggestions as to the reorganization of those relations so as to make the conditions for science work in the schools more advantageous, and calls for a discussion of these suggestions by the local associations. This report should be printed and distributed as soon and as widely as possible, and the committee should be continued in order to follow up their suggestions and try to get them put into operation in as far as they are approved. As a result of his activities as chairman of this committee, Mr. Butler has been made a member of a committee of the Department of Secondary Education of the National Education Association, which has just been appointed to study this same problem. In this way the member of the federation secure direct representation in the discussions of the N. E. A. on this matter.

The Committee on Geometry Syllabus has made great progress, and its report promises to be the best piece of work that has yet been done on this subject. The committee expects to finish its work during the coming year, and, when done, the report should be printed and distributed. Another committee is working on the chemistry unit, but this committee is not yet ready to report.

As a new topic worthy of consideration by the federation, the executive committee this year proposes the problem of methods of testing the results of teaching. In order to introduce this topic, Professor Judd was invited to give us some suggestions last year, at the Boston meeting, and Professors Thorndike and Caldwell will give us further ideas on this matter at this meeting. The executive committee believes that no greater benefit can be conferred on a teacher than to interest him in his teaching problems and to encourage him in the scientific study of them. With this idea in mind the Bibliography of Science Teaching was the first piece of work undertaken by the federation; and the papers presented at the meetings in Baltimore and Boston were planned to point in the same direction. Your committee now plans to follow with suggestions as to scientific methods of testing results, since on such methods depends the teacher's ability to find out definitely where improvement is possible.

Another line of investigation which the executive committee wishes to suggest to the federation is that of studying the relations of each particular science to the field of science teaching as a whole, including the problem of the general science course and that of four year science courses in high schools. It is evident that progress in the solution of these problems must precede progress in the solution of the problems of each particular science, and that the federation is in a far better position to carry on such study than is any one of the local associations by itself. We recommend this problem to the incoming executive committee as one to which the energies of the federation might be directed to advantage.

In a nut shell: The federation has been in existence for four years. It has cost the local associations not quite $400. It has issued three bulletins, brought about better acquaintance and understanding among science and mathematics teachers the country over, been a means of producing several valuable reports, and paved the way for securing for the secondary school teachers a voice in college entrance questions and an interest in the scientific study of their teaching problems.

Yet, notwithstanding the value of the work thus far accomplished, your executive committee believes that the work of the federation is not yet fully understood by all the local associations. Experience has shown us that work of this kind must be done slowly, and the local associations are in many cases looking for quicker returns than is possible when so many interests are involved and everything has to be settled by correspondence. For example, nine months of constant correspondence among the members of this committee and the officers of local associations was required before this committee was able to settle the membership of the Committees on Relations between Colleges and High Schools and on a Syllabus in Geometry with the assurance that all the interests represented in the federation were fairly well cared for. In like manner, five months of correspondence was required to select the members of the new Committee on Logarithmic Tables.

For the same reasons, the work of the committees appointed has been slow and laborious. That results have been attained at all is due to the persistent and extensive work done by the chairmen and the members of these committees. Because of this work, however, science teachers are beginning to be better acquainted with one another, and the difficulty of the work will surely diminish as time goes on. The hardest part of the work has now been done, and the federation will be able with increasing efficiency to serve the cause of securing better conditions for teaching science, provided the local associations are ready to continue their cordial support of the organization. If such support fails, the work must grow more difficult and less effective.

During its term of service your committee has had very forcibly impressed upon it the fact that there are still many conflicting interests among the science teachers, and that work that must be carried on largely by correspondence must progress slowly. We are very sure that no other organization has yet produced reports more cosmopolitan and more suited to the needs of the times than those drawn up by the committees of the federation. The value of these reports cannot be appreciated fully until they have been at work for some time. Unless the local associations are still firm in their belief that the federation is being and will continue to be of great service to science teachers in enlarging and developing their common interests, we do not think that it is right to attempt to continue the organization and ask any five men to shoulder the work involved in membership in the executive committee. If the associations understand the work and encourage it, the work is well worth while.

Your executive committee therefore makes the following recommendations:

1. That this report and such other reports of committees as may be presented at this meeting be printed and distributed to all members of all associations as soon as possible.

2. That each association be requested to consider these reports very carefully, to consider the fact that the organization is now formed and the machinery established, for carrying on the work, and to decide, some time before the next meeting (December, 1911), whether it believes that work of the kind that the federation has shown that it can do, is, in the light of local needs, worthy of the continued loyal support of the association. In other words, that each association decide whether it wishes to continue to support the federation.

3. That in case an association decides that it is not wise to continue the Federation, that association be urged not to withdraw until all associations have reported on this matter and all have been notified how the vote stands and what the general feeling among the local associations is.

REPORT OF THE COMMITTEE ON COLLEGE ENTRANCE REQUIREMENTS IN MATHEMATICS AND SCIENCE.

For your committee, appointed in June, 1909, to outline a policy on the part of the federation toward present entrance requirements in mathematics and science, the undersigned begs leave to submit the following report, with this word of explanation:

Inasmuch as an actual meeting of your committee has proven impossible, the outline of this report was submitted to the several members for criticism and suggestions, and advantage has been taken of these suggestions in making the final form accord as nearly as possible with the general sentiment of the committee. This renders the chairman alone responsible for the final form, and the report is therefore submitted for action, with this explanation.

Your committee has conducted much correspondence with secondary teachers in all parts of the country, and finds an ever increasing dissatisfaction with the present entrance conditions. This feeling has been well expressed in a pamphlet published by the High School Teachers' Association of the City of New York, entitled, "Articulation of High School and College; or, A Plea for the Reorganization of Secondary Education." In this pamphlet there is set forth in ample detail the rapidly spreading conviction that our public high schools are seriously hampered by present college entrance requirements. Copies of this pamphlet can be secured by applying to C. D. Kingsley, 400 Fourth Street, Brooklyn, N. Y.

In the West, school and college are coöperating with marked success in bringing about a better adjustment between them.

To aid in securing an equally happy condition in the East, the association appointed a committee of five, to whose careful study of present conditions is due the admirable presentation of facts, of practice, and of opinion contained in their pamphlet, which so well deserves full and thoughtful consideration from both school and college.

Further voice has recently been given to the same sentiment by the action of three important departments of the National Education Association. The departments of secondary education, of manual training and art, and of business education united at the last meeting in requesting the colleges to give to the matter of entrance requirements their most careful consideration.

In the judgment of your committee, the time is ripe for a formal submission of this whole subject to the various affiliated societies now allied to the federation, so that next year we may proceed to action with a full expression of opinion from them, and thus proper and necessary action may be taken.

Your committee has therefore drafted resolutions hereto attached, formulating their ideas of the needed changes in the matter of entrance requirements, and now recommends that these resolutions be referred to the various affiliated societies for their consideration and action during the coming year.

Respectfully submitted for the committee.

WILLIAM M. BUTLER,
Chairman.

YEATMAN HIGH SCHOOL,
ST. LOUIS, MO.

RESOLUTIONS SUBMITTED FOR ADOPTION.

WHEREAS—The recent extraordinary economic progress in the scientific and industrial worlds has created new and profound educational problems which can only be solved by careful investigation and experimentation, conducted by men experienced in the work of these schools, and with the aid and coöperations of the college, as well as of the business community, and

WHEREAS—The present high school courses have been subjected to trenchant criticism, especially from the industrial and business worlds, chiefly because present courses give insufficient attention to vocational training or to the future work of the child, and this has been one of the causes contributing to the loss from the high school of both boys and girls who would profit largely by courses that would more directly prepare them to meet the actual demands of business and of manufacturing life; and

WHEREAS—Although we recognize the grat benefits that have come in the past to the secondary school through college entrance requirements, we yet believe that the present excessive severity of these requirements along certain traditional lines and the failure of the colleges to recognize the educational value of vocational courses toward college admission, are conditions which very seriously hamper the freedom of the secondary schools and prevent necessary investigation, repeated experiment, and successful development of courses to meet present needs and educational growth; and

WHEREAS—The present "unit system" of admission to college, after sufficient trial, has proven unsatisfactory because of the difficulty of reaching fair and suitable definition of these units and of properly crediting them, thus provoking endless discussion between school and college, as well as causing never ceasing friction in administration; and

WHEREAS—The colleges have long been urging the secondary schools to employ none but college graduates as teachers, and the schools have so far as the college offered trained teachers endeavored to comply with this request; therefore be it

Resolved—That we urge the colleges to abandon the "unit system" and in its place to accept the certificate of the high school at its face value for such work as it covers, and permit this to entitle the student to take up such college work as his preparation may warrant, whenever the certificate stands for four years of systematic and thorough training in a good high school; and

Resolved—That we recommend that the merits of the high school for such certification be determined by conference between schools and colleges in such associations as the North Central Association of Secondary Schools and Colleges, so that due weight may be given both to what the colleges desire and to what the schools can safely undertake; and

Resolved—That we request the colleges to consider whether the work done by its students in college does not in large part furnish a better basis for testing the efficiency of school preparation than do the present methods of entrance examination and of official inspection and

Resolved—That as we consider the larger and the more important duty of the secondary school is the preparation of the students for immediate entrance upon useful life in their own communities, we believe the college should cease to discriminate against subjects that the schools find necessary in preparing their pupils for such duties; and

Resolved—That we invite the college to come into more intimate contact with the secondary schools by requiring their professors who give general courses to do some visiting of the secondary schools at frequent intervals, so that they may acquire a better personal acquaintance with high school work and high school conditions and

Resolved—That we urge upon college men that they take a larger part in the work of teachers' associations, so as to secure real acquaintance and earnest coöperation, based upon mutual consideration and esteem; and

Resolved—That we urge the colleges to offer greater facilities for the adequate training of teachers that liberal courses in pedagogy be established and ample opportunities be offered for practice teaching. Such influences for professional training, we believe, will do far more to raise the standard of work in our high schools than the present entrance requirements or system of inspection.

REPORT OF THE COMMITTEE ON LOGARITHMIC TABLES.

Your committee to consider the question of the best form of logarithmic tables for use in college entrance examinations begs leave to submit the following report.

The committee began its work on the assumption that the principal question to be decided was whether on the whole four-place tables or five-place tables will best serve the purpose stated, and that tables of less than four places of decimals or more than five places are used so seldom in school work as not to require serious consideration in this connection. As a result of extensive correspondence with teachers both in colleges and secondary schools, the committee found that this assumption was fully justified. When it came to a choice between four-place and five-place tables, however, the committee found both sentiment and practice pretty evenly divided. Amongst the larger and more influential colleges and universities in the East and Middle West, both sides of the question are represented, with predominance, so far as numbers are concerned, in favor of five-place tables. It is to be noted, however, that with most of the colleges which admit students only by examination, the practice is to use four-place tables in the entrance examinations, and the sentiment in favor of this practice is with them very pronounced.

The secondary schools are much more strongly on the side of five-place tables. This is especially true of the public high schools, including the large city high schools, although there are exceptions. The private schools, whose business is predominatingly college preparation, are again pretty evenly divided. Some reported to the committee that they prefer and use five-place tables in their work, even though it involves the necessity of giving many of their pupils special training in the handling of four-place tables for the college examinations. With many if not most of these schools, however, the desirability of uniformity of practice in the college examination outweighs other considerations.

On the whole the committee concludes that the sentiment in favor of the use of four-place tables in college entrance examinations is growing, though it has not yet by any means reached such a measure of predominance as would entitle it to exclusive recognition.

Three subordinate questions came up for the committee's consideration. These were:

(1) Whether or not the tables used in examination should be provided with tables of differences and proportional parts.

(2) Whether with four-place tables they should be arranged for the sexagesimal or decimal division of the degree.

(3) Whether negative characteristics when they occur, should be printed as such, or increased by 10.

With regard to (1) the committee is of the opinion that the tables provided at college entrance examinations should not be furnished with tables of differences and proportional parts. In reaching this decision the committee considers that many pupils use in school tables which are not provided with these helps, and that where this is not the case they will undoubtedly have had such training as would enable them to dispense with their use. Moreover, it is more confusing to a student unfamiliar with these auxiliary tables to have presented to him at an examination a table which is provided with them, than would be the case where the conditions are reversed.

With regard to (2) the committee has found that the greater number of those who favor the use of four-place tables prefer also to have them arranged for the decimal division of the degree.

Upon (3) the committee found that sentiment is generally in favor of the prevailing practice of printing the characteristics 9, 8, etc., in the trigonometric tables instead of the corresponding negative characteristics.

For the reasons set forth above the committee makes the following recommendations, viz.:

I. That in college entrance examinations involving logarithmic computation, both five-place and four-place tables be provided, and the student be given the option which he will use.

II. That with five-place tables the trigonometric functions be given for every minute of the quadrant, but that with four-place tables they be given for every tenth of a degree, except that for the first eight or ten degrees they should be given for every hundredth of a degree; that no tables of differences and proportional parts be provided; and that logarithms with negative characteristics have the characteristics increased by 10.

The committee begs that the federation will accept this report and discharge them from further consideration of the subject.

FLETCHER DURELL,
VIRGIL SNYDER,
JOHN H. DENBIGH,
WILLIAM B. CARPENTER,
EDWIN S. CRAWLEY, *Chairman.*

REPORT OF THE COMMITTEE ON BIBLIOGRAPHY.

Your Committee on Bibliography of Science Teaching begs to report that the Bibliography has been accepted for printing by the United States Bureau of Education. It is now in type, the proof has been read, and printed copies should be available at a very early date.

R. E. DODGE, *Chairman.*

REPORT OF THE COMMITTEE ON GEOMETRY SYLLABUS.

The Committee of Fifteen on Geometry Syllabus, which was appointed at the Baltimore meeting has been working in three subdivisions of five members each under the chairmanship respectively of Professor D. E. Smith, of Columbia University, Professor E. R. Hedrich, of the University of Missouri, and Professor H. L. Rietz, of the University of Illinois. The first division has under consideration definitions and logic, the second minimum and full list of theorems, and the third problems and applications. The work of each subcommittee has been fully developed and transmitted to all members of the whole committee for further criticisms and suggestions, previous to a meeting of the subchairmen and several other members held at Cleveland on November 25 and 26, 1910, at which time the whole matter was worked over item by item and substantial agreement was reached on all points.

The plan is now to print a preliminary edition of two or three hundred copies to distribute among a selected list of teachers throughout the country for still further suggestions and criticisms previous to the presentation of a further report at the meeting of the National Educational Association in July, 1911, and the final report to the federation in December, 1911. It it believed that funds can be secured for printing the preliminary edition of the report, but it is hoped that the federation will be able to furnish the funds for its final distribution to practically all teachers of geometry in the country.

Respectfully submitted,
H. E. SLAUGHT,
Chairman.

REPORT OF THE COMMITTEE ON A MATHEMATICAL JOURNAL.

The chairman of your committee on a mathematical journal has felt that the teachers of mathematics of this country should have a chance to say whether or not they desired a magazine devoted entirely to the interests of the teaching of mathematics. In order to get at this and other related questions, a questionnaire was sent to all members of our committee. Replies have been received from most members of the committee, but not, as yet, from all. For the most part those who did reply gave their opinions as to the feeling of the members of their associations without having the question presented and a census of the views of the members taken. This was due to the fact that the replies were sent before the various associations had held meetings. Your committee, therefore, has no complete report to make at this time. From the replies received, however, it does not seem to the chairman very likely that the committee will be able to come to any definite agreement, and if the federation thinks best it may perhaps be discharged.

W. H. METZLER,
Chairman.

REPORT OF THE ASSOCIATION OF TEACHERS OF MATHEMATICS IN THE MIDDLE STATES AND MARYLAND.

This association has had a year of steady progress. The meetings of the general association and of its sections have been full of enthusiasm and of help for the teacher.

A number of committees have been at work on various problems, the one of broadest scope being, perhaps, that on the Algebra Syllabus. This committee has reported on Elementary, Intermediate, and Advanced Algebra, and the report has been amended and accepted by the association. This report will be published in the next number of the MATHEMATICS TEACHER.

A catalogue of members is in course of preparation. The names of those who are behind in their dues are being weeded out, and the membership is being put on as sound a basis as possible. The number of new members recently added is very large and will add considerably to the influence of the association.

The MATHEMATICS TEACHER has continued to gain in influence and in popularity, and there is no longer any doubt of its having proved the need of such a magazine.

The association has been invited to hold its annual meeting in conjunction with the Association of Colleges and Preparatory Schools of the Middle States and Maryland, and has accepted for next fall. The spring meeting will be held in New York.

HOWARD F. HART,
Secretary.

REPORT OF THE ASSOCIATION OF MATHEMATICAL TEACHERS IN NEW ENGLAND.

The association has held during the present year three formal meetings. The midwinter meeting at Hartford, Conn., February 26, was held in connection with the meeting of the Connecticut Association of Classical and High School Teachers. Here Mr. John C. Packard read an account of certain personal details in connection with John Perry, and gave an interesting survey of the main features of the Perry Movement as they appeared to him on his visit to England. Mr. Eugene Randolph Smith delivered by invitation an address on "The Syllabus

Method of Teaching Geometry," and Mr. George W. Evans spoke on "Simpson's Rule for Plane Areas."

The eighth spring meeting was held in Cambridge, Mass., April 16, and included two notable addresses—one on "Arithmetic for Industrial Schools," by Mr. William H. Dooley, of the Independent Industrial School of Lawrence, Mass.; and the other, "Mathematics for Agricultural Students," by Professor Charles A. Wheeler, of the Connecticut Agricultural College, Storrs, Conn. Six practical teachers gave their advice as to special methods of teaching algebra in the entering class of the high school.

The eighth annual meeting, held in Boston on Saturday, December 3, presented two addresses, one by Professor J. C. Tracy, of Yale University, on "Efficiency in Calculation," and the other by Mr. Peter F. Gartland, of the English High School in Boston, on "Two Experiments on Grammar School Graduates."

Most of the work of this year was devoted to examining possible adjustments between the modern demand for practical instruction and the scientific necessities of mathematical education. The addresses delivered before the association have borne great emphasis on practical applications and practical details of work. The association is not committed, by any means, to any of the different kinds of reform in mathematical instruction that have been brought forward, but a disposition to examine all such propositions has shown itself in many ways, notably in the appointment of a committee whose duty it is to consider the question whether there is any reason for remodeling the secondary school course in mathematics, in content or in order of development; this committee to report at some meeting of the association next year. The discussions that have taken place in the meetings have enlisted the attention of many of the college men who are members, and the association has had at various times the benefit of their judgment upon these matters. It is uncertain, however, whether the association will commit itself either one way or the other during the coming year.

GEO. W. EVANS,
Secretary.

REPORT OF THE CENTRAL ASSOCIATION OF SCIENCE AND MATHEMATICS TEACHERS.

The Central Association of Science and Mathematics Teachers has performed a very profitable year's work. Committees appointed a year ago have carried on their investigations during the year, and made reports at the annual meeting.

Reports were presented to the association at the annual meeting in Cleveland, O., November 25 and 26, by a committee on "Fundamentals Common to the Various Sciences and Mathematics," by a committee on "Coöperative Experiments in Teaching Science," and by a committee on "The Relation of Elementary School Nature Study to Secondary School Science." An address was given by Dr. Dayton C. Miller, Case School of Applied Science, on "Sound Waves: Their Meaning, Registration, and Analysis." An address was given by Dr. Harvey W. Wiley, Washington, D. C., on "Food Facts which Every Citizen Should Know." Also many valuable reports and addresses were given before the various sections of the association.

All of these reports and addresses will be printed in the annual volume of Proceedings, which has been made a permanent publication of the Central Association.

The annual report of the secretary-treasurer for the year ending November 23, 1910, showed that the Central Association had at that date a paid-up membership of 488, and a total membership of 575, showing a large increase in the membership of the association during the year.

The next annual meeting will be held in Chicago in November, 1911.

JAS. F. MILLIS,
Secretary.

REPORT OF THE NEW ENGLAND ASSOCIATION OF CHEMISTRY TEACHERS.

The thirty-sixth meeting of the association was held at Harvard University on December 4, 1909. After the reports of standing committees, the election of officers was held. Ostwald and Morse's "Elementary Modern Chemistry," Emery's "Elementary Chemistry," and Segerblom's "First Year Chemistry," were reviewed. Mr. L. G. Smith spoke on "Some Experiences of an American Teacher in the German Higher Schools." Professor T. W. Richards's address was on "The Value of Investigation to the Teacher of Chemistry."

The thirty-seventh meeting was held at the Lowell Textile School on February 12, 1910. The morning was spent in observing the equipment and the methods employed in the teaching of textile chemistry. At the afternoon session Professor Olney gave a very interesting talk on the work of the school. Godfrey's "Elementary Chemistry" and Biltz's "Introduction to Experimental Inorganic Chemistry" were reviewed. The report of the delegates to the American Federation meetings was made by Wilhelm Segerblom. Professor Newell presented the report of the committee on current events.

The thirty-eighth meeting was held at the Harvard Medical School on April 16, 1910. The meeting opened with the reports of the various standing committees. Under new business Mr. Segerblom called attention to the American Federation report in *School Science and Mathematics.* Attention was also called to the fact that delegates had been appointed by the federation to consider the possibility of changing the College Entrance Board chemistry syllabus. The principal address was on "The Function of Enzymes in the Chemistry of Life," by Dr. A. W. Peters. This was followed by a short address by Dr. C. A. Scott on "The Psychology of Science Teaching." The laboratories of the Medical School were visited at the close of the morning session. The afternoon was spent at the Carnegie Nutrition Laboratory, where Mr. Carpenter, the chemist in charge, described the laboratory and its special apparatus.

Through the kindness of President A. Lawrence Lowell, a course on the "Chemistry of Food" was given by Professor A. G. Woodman.

The twenty-ninth meeting of the association was held at Boston University, October 22, 1910. After the reading of the reports, Williams's "Essentials of Chemistry" and Meade's "Chemist's Pocket Manual" were reviewed. The opening address was given by Professor H. W. Morse on "The Experimental Basis of the Theory of Radio-activity." Mr. W. G. Whitman described some interesting new experiments. The closing address was by Professor Latham Clark on "Some Phases of the German Chemical Industry."

The following officers were elected for the year 1910–11: President, Mr. F. C. Adams; vice-president, Mr. C. W. Goodrich; secretary, Mr. E. S. Bryant; treasurer, Mr. A. M. Butler; executive committee, Professor F. L. Bardwell, Mr. H. Bisbee, and Mr. G. A. Cowen.

EDWARD S. BRYANT,
Secretary.

REPORT OF THE MISSOURI SOCIETY OF TEACHERS OF MATHEMATICS AND SCIENCE.

Our society has held two meetings during the past year—one at Kirksville, Mo., in May, and one in connection with the State Teachers' Association at St. Joseph's, Mo., in November. We have made arrangements with the State Teachers' Association to have reports of our meetings published in connection with their annual report and to have reprints made for the use of members of the society and others who may wish them.

Our membership for 1909–10 was 114. Our total membership for this year cannot be determined at this time, since not all of our members have renewed their membership.

L. D. AMES,
Secretary.